



Chapter 4. Timeliness

Importance and Measures

Timeliness, or the ability to receive care when needed,¹ is one of the six aims for improving health care quality established by the Institute of Medicine. Long waits in doctors' offices and emergency departments and in getting treatments and tests define the elements of measuring and understanding timeliness in the health care system.²

Morbidity and Mortality

- Lack of timeliness can result in emotional distress, physical harm, and financial consequences for patients.³
- Early intervention, whether with percutaneous coronary stenting or thrombolytic therapy, is regarded as the best chance for protecting heart muscle damage in patients suffering heart attacks.⁴
- Stroke patients' mortality and long-term disability are largely influenced by the timeliness of therapy.^{5, 6}
- Timely delivery of appropriate care can help reduce mortality and morbidity for both acute conditions such as heart attacks and chronic conditions such as chronic kidney disease.⁷⁻⁹

Cost

- Early care for comorbid conditions such as depression has been shown to reduce hospitalization rates and costs for Medicare beneficiaries.¹⁰
- Early care for complications in patients with diabetes can reduce overall costs of the disease.¹¹ Some research suggests that complications can amount to nearly \$50,000 per patient over 30 years.¹²
- Timely outpatient care can reduce admissions for pediatric asthma, which account for \$835 million in total hospitalization charges annually.^{13,14}

Measures

This report focuses on two of the nine measures in the timeliness measure set:

- Time to initiation of thrombolytic therapy for heart attack patientsⁱ
- Patient's perceptions of the timeliness of appointments for routine care and illness care

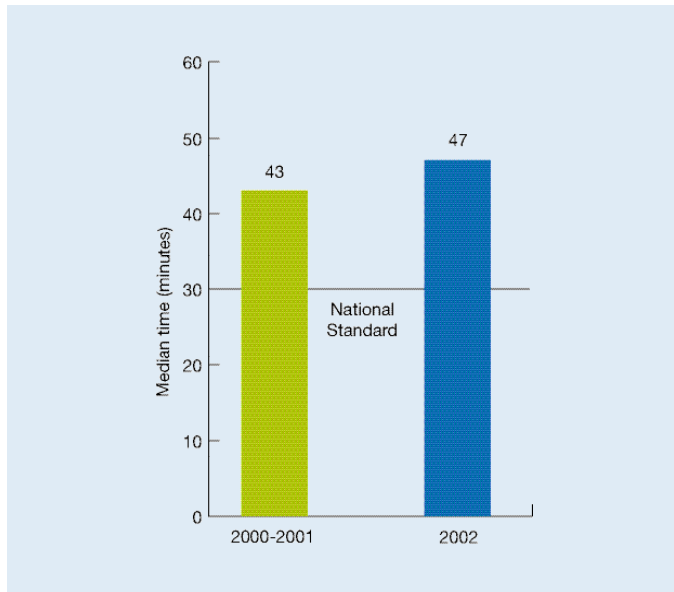
ⁱ These measures are described in the Heart Disease section of Chapter 2.

Findings

Time to Initiation of Thrombolytic Therapy for Heart Attack Patients

The necessity of treating patients in a timely fashion within an episode of care is especially important for emergency situations such as heart attacks. Timely administration of thrombolytic agents can save lives for patients suffering from such attacks.

Figure 4.1. Median time (minutes) from arrival of heart attack patient to initiation of thrombolytic agent, by year, 2000-2001 and 2002



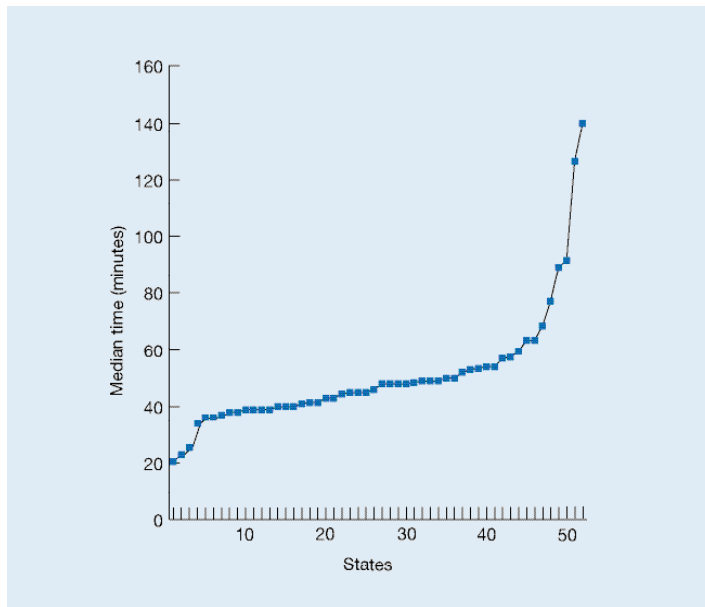
Source: Centers for Medicare & Medicaid Services, Medicare Quality Improvement Organization Program, 1999-2000 and 2000-2001.

Note: This measure is assessed for patients with ST segment elevation or left bundle branch block (LBBB) on the electrocardiogram (ECG) performed closest to the hospital arrival time.

- Between 2000-2001 and 2002, the median time to the initiation of a thrombolytic agent increased slightly but not significantly from 43 to 47 minutes (Figure 4.1).
- The median time to the initiation of thrombolytic agent exceeds the national standard of 30 minutes.¹⁵



Figure 4.2. Variation in median time to initiation of thrombolytic agent across the 50 States, 2000-2001



Source: Centers for Medicare & Medicaid Services, Medicare Quality Improvement Organization Program, 2000-2001.

Note: Number of State units is 52 (includes DC and PR).

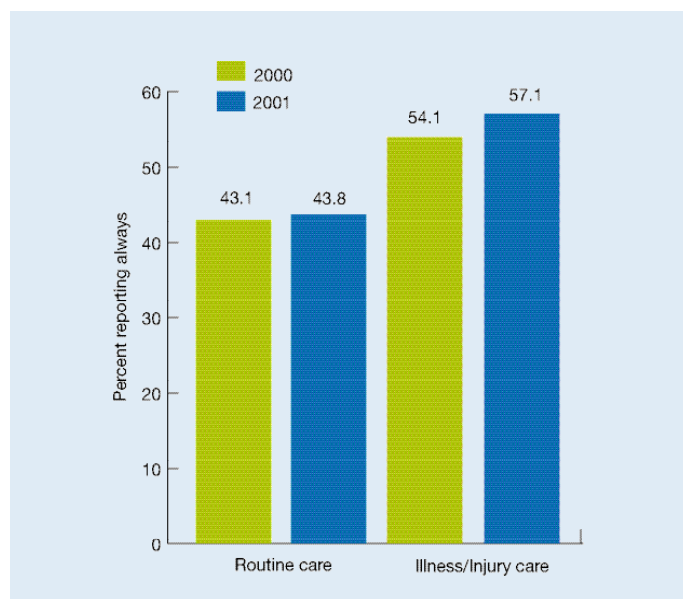
- There is a sevenfold variation in timeliness for the administration of a thrombolytic agent across States, ranging from a low of 20 minutes to a high of 140 minutes (Figure 4.2).



Patient Perceptions of Timeliness of Appointments for Care

The ability of patients to obtain appropriate care for a specific problem once they have entered the health care system is a key element in a patient-focused health care system. Obtaining appointments for illness or injury and for routine care are important markers of how well the health care system is responding to patients' perceived needs.

Figure 4.3. Percent of adults who report always getting an appointment as soon as wanted, by type of care and year, 2000 and 2001



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2000 and 2001.

- Less than half of adults report that they always get an appointment as soon as they wanted for routine care; slightly more than half report that they always get an appointment as soon as they wanted for illness/injury care (Figure 4.3).
- There has been no statistical change in patient perceptions of timeliness of appointments for routine care and illness/injury care for adults between 2000 and 2001.



List of Measures: Timeliness

Measure	Year	National estimate	National table number	State table number
Basic access:				
Percent of persons who report that they have a usual source of medical care, by place of care	2001	88.2	3.1a 3.1b 3.1c	xxx
Percent of families that experience difficulties in obtaining care, by reason (overall)	2001	11.6	3.2a 3.2b	xxx
Getting appointments for care:				
Among persons age 18 and over who reported making an appointment for routine health care in the last 12 months, percent distribution of how often they got an appointment as soon as wanted (always)	2001	43.8	3.3a 3.3b	3.3c 3.3d 3.3e 3.3f
Among children under age 18 who had appointments reported for routine health care in the last 12 months, percent distribution of how often they got an appointment as soon as wanted (always)	2001	67.6	3.4a	3.4b 3.4c
Among adults age 18 and over who reported making an appointment for an illness or injury in the last 12 months, percent distribution of how often they got an appointment as soon as wanted (always)	2001	57.1	3.5a 3.5b	3.5c 3.5d 3.5e 3.5f
Among children under age 18 who had appointments reported for an illness or injury in the last 12 months, percent distribution of how often they got an appointment as soon as wanted (always)	2001	76.9	3.6a	3.6b 3.6c
Waiting time:				
ED visits: Percent ED visits where patient was admitted to the hospital or transferred to other facility whose ED visit was greater than or equal to six hours	2000-2001	25.935	3.7	xxx
ED visits: Percent of ED visits where patients left before being seen	2000-2001	1.607	3.8a 3.8b	xxx

Note: See Tables Appendix for national and State tables listed above.

**Other Measures Related to Timeliness in the NHQR Measure Set**

Measure	Year	National estimate	National table number	State table number
Process: Percent of AMI patients administered aspirin within 24 hours of admission	2002	85.34	1.36a	1.36b
Process: Percent of AMI patients administered beta-blocker within 24 hours of admission	2002	76.26	1.38a	1.38b
Process: Median time in minutes to thrombolysis for AMI patients. Time from arrival to initiation of a thrombolytic agent in patients with ST segment elevation or left bundle branch block (LBBB) on the electrocardiogram (ECG) performed closest to hospital arrival time	2001	47	1.42a	1.42b
Process: Median time in minutes to PTCA for AMI patients. Median time from arrival to percutaneous transluminal coronary angioplasty (PTCA) in patients with ST segment elevation or left bundle branch block (LBBB) on the electrocardiogram (ECG) performed closest to hospital arrival time.	2001	187.5	1.43a	1.43b
Process: Percent of patients with pneumonia who receive the initial antibiotic dose within 4 hours of hospital arrival	2002	63.09	1.86a	1.86b

Note: See Tables Appendix for national and State tables listed above.



References

1. Berry LL, Seiders K, Wilder SS. Innovations in access to care: a patient-centered approach. *Ann Intern Med* 2003;139(7):568-74.
2. Institute of Medicine. *Crossing the quality chasm: a new health system for the 21st century*. Washington, DC: National Academies Press; 2001; pp. 53-54. Available at: <http://books.nap.edu/books/0309072808/html>. Accessed July 28, 2004.
3. Leddy KM, Kaldenberg DO, Becker BW. Timeliness in ambulatory care treatment. An examination of patient satisfaction and wait times in medical practices and outpatient test and treatment facilities. *J Ambul Care Manage* 2003;26(2):138-49.
4. Kloner RA, Rezkalla SH. Cardiac protection during acute myocardial infarction: where do we stand in 2004? *J Am Coll Cardiol* 2004;44(2):276-86.
5. Schellinger PD, Warach S. Therapeutic time window of thrombolytic therapy following stroke. *Curr Atheroscler Rep* 2004;6(4):288-94.
6. Kwan J, Hand P, Sandercock P. Improving the efficiency of delivery of thrombolysis for acute stroke: a systematic review. *QJM* 2004;97(5):273-9.
7. Gurwitz JH, McLaughlin TJ, Willison DJ, et al. Delayed hospital presentation in patients who have had acute myocardial infarction. *Ann Intern Med* 1997;126(8):593-9.
8. American Heart Association. Know the facts, get the stats; 2003. Available at: <http://www.americanheart.org/downloadable/heart/1073975605723Know%20Facts%20Get%20Stats.pdf>. Accessed August 10, 2004.
9. Kinchen KS, Sadler J, Fink N, et al. The timing of specialist evaluation in chronic kidney disease and mortality. *Ann Intern Med* 2002;137(6):479-86.
10. Himelhoch S, Weller WE, Wu AW, et al. Chronic medical illness, depression, and use of acute medical services among Medicare beneficiaries. *Med Care* 2004;42(6):512-21.
11. Ramsey SD, Newton K, Blough D, et al. Patient-level estimates of the cost of complications in diabetes in a managed-care population. *Pharmacoeconomics* 1999;16(3):285-95.
12. Caro JJ, Ward AJ, O'Brien JA. Lifetime costs of complications resulting from type 2 diabetes in the U.S. *Diabetes Care* 2002;25(3):476-81.
13. Mellon M, Parasuraman B. Pediatric asthma: improving management to reduce cost of care. *J Manag Care Pharm* 2004;10(2):130-41.
14. Owens PL, Thompson J, Elixhauser A, et al. *Care of children and adolescents in U.S. hospitals*. HCUP Fact Book No. 4. Rockville, MD: Agency for Healthcare Research and Quality; 2003. Available at: <http://www.ahrq.gov/data/hcup/factbk4/factbk4.pdf>. Accessed August 10, 2004.
15. Antman EM, Anbe DT, Armstrong PW, et al. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction—executive summary: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). *Circulation* 2004;110(5):588-636.